

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
11 December 2003 (11.12.2003)

PCT

(10) International Publication Number  
**WO 2003/101284 A3**

(51) International Patent Classification<sup>7</sup>: **A01N 43/04**, (74) Agents: **LOCKYER, Jean, M. et al.**; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111 (US).

(21) International Application Number:  
PCT/US2003/017941

(22) International Filing Date: 4 June 2003 (04.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/386,113	4 June 2002 (04.06.2002)	US
60/385,996	4 June 2002 (04.06.2002)	US
60/386,935	6 June 2002 (06.06.2002)	US
60/387,038	6 June 2002 (06.06.2002)	US
60/386,956	6 June 2002 (06.06.2002)	US
60/386,958	6 June 2002 (06.06.2002)	US
60/386,812	6 June 2002 (06.06.2002)	US

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
26 August 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(71) Applicant (for all designated States except US): **METABOLEX, INC.** [US/US]; 3876 Bay Center Place, Hayward, CA 94545 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BERNARD, Allan** [IE/US]; 940 Guerrero Street, San Francisco, CA 94110 (US). **LAVAN, Brian** [GB/US]; 2020 Lawton Street, San Francisco, CA 94122 (US). **MOODIE, Shonna** [GB/US]; 2091 Golden Gate, San Francisco, CA 94115 (US). **WATERS, Steve** [US/US]; 1 Lobelia Lane, San Ramon, CA 94583 (US). **WONG, Chi-Wai** [CN/US]; 28073 Thorup Lane, Hayward, CA 94542 (US).

(54) Title: METHODS OF DIAGNOSING AND TREATING DIABETES AND INSULIN RESISTANCE

(57) Abstract: The present invention provides compositions and methods for diagnosing and treating diabetes and insulin resistance. In particular, the invention provides methods of identifying modulators of the polynucleotides or polypeptides of the invention and using those modulators to treat diabetes, as well as methods of diagnosing diabetes by measuring the levels of the polynucleotides or polypeptides of the invention in a patient.

WO 2003/101284 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/17941

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A01N 43/04; A61K 31/70; G01N 33/53

US CL : 514/44, 866; 435/7.1

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/44, 866; 435/7.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
WEST, Medline, Caplus, Biosis, Embase**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/00506 A2 (SAGAMI CHEMICAL RESEARCH CENTER) 06 January 2000, see entire document.	1-28
Y	WO 01/57221 A2 (CEPTYR, INC.) 09 August 2001, see entire document.	1-28
Y	WO 01/97850 A2 (SCHERING AKTIENGESELLSCHAFT) 27 December 2001, see entire document.	1-28
Y	KOLLE, G. et al. GRIM1, a Novel Gene Encoding a Cysteine-rich Repeat Protein, is Developmentally Regulated and Implicated in Vertebrate CNS Development and Organogenesis. Mech. Dev. February 2000, Vol. 90, pages 181-193, see entire document.	1-28
Y	LI, D., et al. Human Protein Tyrosine Phosphatase-Like Gene: Expression Profile, Genomic Structure, and Mutation Analysis in Families with ARVD. Gene. October 2000, Vol. 256, pages 237-243, see entire document.	1-28

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

25 June 2004 (25.06.2004)

Date of mailing of the international search report

01 JUL 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

G. R. Ewoldt, Ph.D.

Telephone No. (703) 308-0196